Tools for Induction and Measurement of Notch Signaling

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BACKGROUND

The Notch signaling pathway has been shown to be crucially important for normal development and is associated with several human inherited and late onset diseases. Four distinct Notch receptors (Notch 1-4) have been identified in humans and in mouse. In addition, there are multiple vertebrate Notch ligands: Delta-like 1-4 (Dll1-4), jagged1, and jagged 2. Research tools to study Notch signaling are important for further understanding of the pathway and its contribution to human disease and development.

INNOVATION

UCLA researchers have successfully cloned the cDNA of the vertebrate Notch ligands Dll1, Dll2, Dll3, Jagged1 and Jagged2. The cDNA constructs for Jagged 1 and Dll1 (Delta 1) have been used to stably transfect L cell lines.In combination with a Notch1 construct, these cell lines can be used to induce, measure and study ligand-induced Notch signaling. Jagged1 and Delta1 cells can be co-cultured with many different cell types. The co-culture system is an excellent method to test inhibitors of Notch signaling that target gamma-secretase, the enzyme responsible for generating the activated form of Notch that functions in downstream signaling. Inhibitors of gamma-secretase are applicable to Alzheimers disease.

APPLICATIONS

- Research tool to study Notch Signaling and diseases related to Notch signaling.

RELATED MATERIALS

- Jagged: a mammalian ligand that activates Notch1. *Cell* (1995)

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Notch1 (93-2) & Notch1 (PCR12) Antibodies

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OTHER INFORMATION

KEYWORDS

research tools, Notch signaling, signal transduction, Jagged

CATEGORIZED AS

- **Research Tools**
  - Other

RELATED CASES

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